WHAT IS CLAIMED IS:

1. A method of controlling the fuel supply to a fuel cell system comprising at least one fuel cell, in which power withdrawn from the fuel cell and provided to a consuming device is switched on and off in a timed manner via an electric connection between the fuel cell and the consuming device, as a function of the fuel existing in the fuel cell, wherein:

a quantity of fuel supplied to the fuel cell system is controlled as a function of a pause to switch-on ratio of said electric connection, such that, based on an actual value of the pause to switch-on ratio, a predefined desired value of the pause to switch-on ratio is restored.

2. The method according to Claim 1, wherein the predefined pause to switch-on ratio is selected to be below approximately P/E = 10% / 90%.

3. The method according to Claim 1, wherein the quantity of fuel is supplied to a gas generating system in which a hydrogen-containing gas is generated for operation of the fuel cell.

4. The method according to Claim 3, wherein the predefined pause to switch-on ratio is selected to be within control accuracy of the gas generating system.

5. The method according to Claim 1, wherein the quantity of supplied fuel is selected such that the quantity of fuel offered to the fuel cell or of hydrogen-containing gas generated from the fuel is always smaller than a quantity of fuel or of hydrogen –

containing gas generated from the fuel, which can be converted by the fuel cell.

6. The method according to Claim 1, wherein a PID control is used for controlling the quantity of supplied fuel.

7. The method according to Claim 1, wherein the control of the quantity of supplied fuel takes place such that a new fuel quantity is determined at least from the product of the previous fuel quantity and a correction factor, the correction factor including at least the desired values and actual values of the pause to switch-on ratio (P/E).

8. The method according to Claim 7, wherein the correction factor is the sum of one plus the difference between the desired value and the actual value of the pause to switch-on ratio.

9. The method according to Claim 7, wherein:

the product also includes a damping factor which is between 0.1 and 1; and

in the case of a relatively smaller actual value of the pause to switch-on ratio, the damping factor is smaller than in the case of a relatively larger actual value of the pause to switch-on ratio.

10. The method according to Claim 1, wherein the fuel cell system is a mobile fuel cell system.

11. A method of controlling operation of a fuel cell in a fuel cell system,

comprising:

regulating a power output of said fuel cell by opening and closing a connection between an output of said fuel cell and an electrical load; and

controlling a flow of fuel to said fuel cell system as a function of an open/close ratio of said connection.

12. The method according to Claim 11, wherein said controlling step comprises performing closed loop control of said flow of fuel, using a negative feedback process, based on a difference between an actual value of said open/close ratio and a desired value of said open/close ratio.

13. The method according to Claim 12, wherein the control of the quantity of supplied fuel takes place such that a new fuel quantity is determined at least from the product of the previous fuel quantity and a correction factor, the correction factor including at least the desired values and actual values of the pause to switch-on ratio (P/E).

14. The method according to Claim 13, wherein the correction factor is the sum of one plus the difference between the desired value and the actual value of the pause to switch-on ratio.